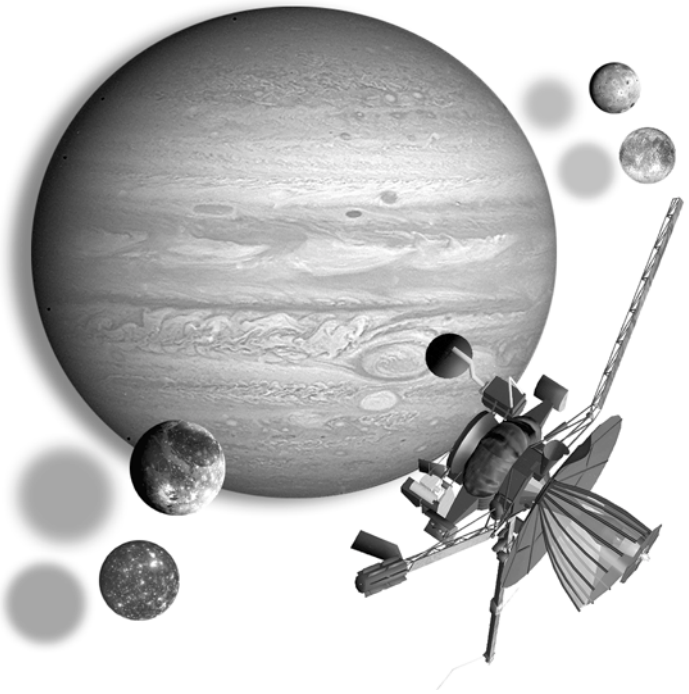

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Galileo

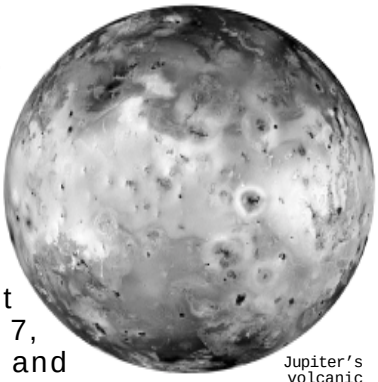
A Jovian Odyssey

Even as the *Voyager* spacecraft completed their initial reconnaissance of the outer Solar System in the late 1970s and 1980s, mission planners looked ahead to a next generation of spacecraft that would orbit the giant outer planets to study them in greater detail. The first fruit of that effort was **Galileo**, an orbiter bound for *Jupiter*.

The sophisticated spacecraft features two sections joined together by a spin bearing somewhat like a lazy-susan. Half of the spacecraft contains pointable instruments such as cameras, and is held fixed in relation to space. The other half of the spacecraft contains instruments that measure magnetic fields and charged particles, and slowly rotates in order to optimize their measurements. Finally, Galileo also carried a descent probe designed to drop into Jupiter's turbulent atmosphere.

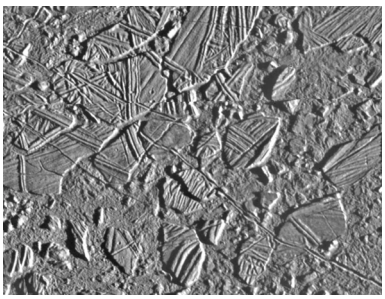
Galileo was launched October 18, 1989, from Kennedy Space Center, Florida, carried into Earth orbit in the cargo bay of Space Shuttle Atlantis. It was then propelled onto its interplanetary flight path by a two-stage solid-fuel motor called an Inertial Upper Stage. Although earlier plans called for Galileo to use a more powerful upper stage so that it could fly directly to Jupiter, the final flight took it by other planets first so that it could gain energy from the gravity of each. Galileo flew past Venus on February 10, 1990, and then twice past Earth — once on December 8, 1990, and again on December 8, 1992.

Also en route to Jupiter, Galileo flew close to two asteroids, the first such visits by any spacecraft. It encountered the asteroid Gaspra on October 29, 1991, and the asteroid Ida on August 28, 1993. During the latter part of its interplanetary cruise, Galileo was used to observe the collisions of fragments of Comet Shoemaker-Levy with Jupiter in July 1994.



Jupiter's volcanic moon - Io

Galileo arrived at Jupiter on December 7, 1995, entering orbit and dropping its instrumented probe into the giant planet's atmosphere. Since then it has made about two and a half dozen orbits of Jupiter, usually flying close to one of its four major moons during each loop around the planet.



Europa's fractured surface reveals a mosaic of 'iceberg'-like formations, possibily hinting at a sub-surface ocean

Galileo discovered strong evidence that Jupiter's moon Europa has a melted saltwater ocean under an ice layer on its surface. The spacecraft also found indications that two other moons, Ganymede and Callisto, have layers of liquid saltwater as well. Other major science results from the mission include details of varied and extensive volcanic processes on the moon Io, measurements of conditions within Jupiter's atmosphere, and discovery of a magnetic field generated by Ganymede.

More infromation on the Internet at:
http://galileo.jpl.nasa.gov/